

Association of Sporadic Moderate-Vigorous Physical Activity with Cardiovascular Disease Risk Factors - A Systematic Review

Putri VP*

Faculty of Medicine Universitas Gadjah Mada, Yogyakarta, Indonesia

*corresponding author: vegapratwi90@gmail.com, vegapratwi@yahoo.com

Abstract

Background: Physical activity is an important factor controlling chronic diseases such as metabolic syndrome that is closely related to cardiovascular diseases (CVD). Currently, it has been recommended by WHO and several national guidelines to maintain moderate/vigorous physical activity (MVPA) 150minutes/week in at least 10-minutes bout. Indeed, smaller fraction of physical activity contributed to the most daily activity.

Objectives: To evaluate the association of sporadic (<10minutes) MVPA and CVD risk factors

Methods: Literature searching and review was done using key words 'sporadic physical activity', 'incidental physical activity', 'cardiometabolic marker', and 'metabolic syndrome' on Medline, Pubmed, and Cochrane library database. Two author independently conducted review on literature assessing the association of sporadic MVPA with CVD risk outcome such as metabolic syndrome, dyslipidemia, and obesity marker such as obesity and waist circumference. Only studies met the inclusion and exclusion criteria were included in this study. Physical activities were measured objectively using accelerometer.

Result: Data was taken from 738 participants from 4 cross-sectional studies. Majority of participant are adult age 40s. Generally, all study showed the benefit of sporadic physical activity on reducing CVD risk factors. Two studies indicated an independent association of sporadic MVPA with metabolic syndrome as a compilation of several risk factors. Significant associations were found on lipid profile and obesity marker such as triglyceride, HDL, BMI and waist circumference in three studies. One study revealed negative correlation of sporadic MVPA on Framingham score. All studies showed similar association of sporadic MVPA in comparison with prolonged (≥ 10 minutes) MVPA.

Conclusion: Sporadic MVPA was negatively associated with metabolic syndrome, lipid profile, and obesity marker. Either sporadic or prolonged showed significant association. Although achieving prolonged bouts is important as recommended by international guideline, sporadic physical activity can be an easier, time effective, and feasible way to start maintaining physical activity.